

AMENDMENTS TO THE CLAIMS

1. (Original) A passive infra-red detector comprising:
at least three sub-detectors, each of said at least three sub-detectors being operative to receive infra-red radiation from a corresponding one of at least three sub fields-of-view, each of said at least three sub fields-of-view being exclusively defined by an optical element which does not define any other of said at least three sub fields of view, said at least three sub fields-of-view being angled with respect to each other, adjacent ones of said at least three sub fields-of-view being separated by a gap of no more than 30 degrees and at least one of said at least three sub fields-of-view having at least one of the following characteristics:
 - a) extending over no more than 45 degrees in azimuth; and
 - b) including not more than three azimuthally distributed detection zones; andsignal processing circuitry, operative to receive output signals from said at least three sub detectors and to provide a motion detection output.
2. (Original) A passive infra-red detector according to claim 1 and wherein said at least three sub fields-of-view are substantially non-overlapping.
3. (Currently Amended) A passive infra-red detector according to ~~either of claims 1 and 2~~ and wherein each said optical element is directed in a corresponding direction, the corresponding directions of said optical elements of each two of said at least three sub-detectors being different.
4. (Currently Amended) A passive infra-red detector according to ~~any of claims 1 to 3~~ and wherein said optical element comprises a non focusing optical element.
5. (Original) A passive infra-red detector according to claim 4 and wherein said non-focusing optical element comprises a reflective optical element.

6. (Currently Amended) A passive infra-red detector according to ~~any of claims 1 to 3~~ and wherein said optical element comprises a focusing element.

7. (Original) A passive infra-red detector according to claim 6 and wherein said focusing element comprises at least one of a reflective element, a refractive element, a diffractive element and a cylindrical optical element.

8. (Currently Amended) A passive infra-red detector according to ~~any of claims 1 to 7~~ and wherein said azimuthally distributed detection zones have corresponding divergence angles and said gap has an angular extent which is less than or equal to twice the largest angular extent of said divergence angles of detection zones of said adjacent ones of said at least three sub fields-of-view.

9. (Currently Amended) A passive infra-red detector according to ~~any of claims 1 to 7~~ and wherein said gap has an angular extent which is less than or equal to a largest azimuthal angle $A - 2B$ between any two adjacent detection zones of said adjacent ones of said at least three sub fields-of-view.

10. (Original) A passive infra-red detector comprising:
at least three sub-detectors, each operative to receive infra-red radiation from a corresponding one of at least three sub fields-of-view; and
signal processing circuitry, receiving output signals from at least two of said at least three sub-detectors and providing a motion detection output in response to receipt of said output signals; noting, within a predetermined first time period, multiple detections by one of said at least two sub-detectors and the absence of detections by another of said at least two sub-detectors and being operative to ignore future detections by said one of said at least two sub-detectors for at least a predetermined second time period.

11. (Original) A passive infra-red detector according to claim 10 and wherein said at least three sub fields-of-view are substantially non-overlapping.

12. (Currently Amended) A passive infra-red detector according to ~~either of claims 10 and 11~~ and wherein said signal processing circuitry is operative to ignore said future detections only in a case where said multiple detections fulfill predetermined pre-alarm criteria.

13. (Currently Amended) A passive infra-red detector according to ~~either of claims 10 and 11~~ and wherein said signal processing circuitry is operative to ignore said future detections only in a case where said multiple detections fulfill predetermined alarm criteria.

14. (Currently Amended) A passive infra-red detector according to ~~any of claims 10 to 13~~ and wherein said signal processing circuitry is operative to extend said predetermined second time period in response to detections by said one of said at least two sub-detectors during the predetermined second time period.

15. (Currently Amended) A passive infra-red detector according to ~~any of the preceding claims-claim 1~~ and wherein said signal processing circuitry is operative to note a sequence of receipt of said output signals by said at least three sub-detectors and to provide motion direction output based on said sequence.

16. (Currently Amended) A passive infra-red detector according to ~~any of claims 1 to 14~~ and wherein said signal processing circuitry is operative to note a sequence of receipt of said output signals by said at least three sub-detectors and to provide motion path output information based on said sequence.

17. (Currently Amended) A passive infra-red detector according to ~~any of the preceding claims-claim 1~~ and wherein said signal processing circuitry is operative to process said output signals according to at least one predefined criterion.

18. (Original) A passive infra-red detector according to claim 17 and wherein said at least one predefined criterion comprises whether a time duration between receipt of said output signals from adjacent ones of said at least three sub-detectors lies within a predetermined range of values.

19. (Currently Amended) A passive infra-red detector according to ~~either of~~ claims 17 ~~and 18~~ and wherein said signal processing circuitry is operative to process said output signals according to said at least one predefined criterion by noting time durations of said output signals from adjacent ones of said at least three sub-detectors and providing said motion detection output at least when the ratio between said time durations is within certain limits.

20. (Original) A passive infra-red detector according to claim 19 and wherein said ratio is in the range of 0.5 to 2.0.

21. (Currently Amended) A passive infra-red detector according to ~~any of~~ claims 17 ~~to 20~~ and wherein said signal processing circuitry is operative to process said output signals according to said at least one predefined criterion by noting a time difference between receipt of said output signals and time durations of said output signals and to provide said motion detection output in response to receipt of said output signals from at least two adjacent ones of said at least three sub-detectors having respective time durations and a time difference therebetween, said time durations and said time difference therebetween having a time relationship therebetween which meets at least one predetermined criterion.

22. (Original) A passive infra-red detector according to claim 21 and wherein said at least one predetermined criterion comprises whether a ratio between said time difference and at least one of said time durations lies within a predetermined range of values.

23. (Original) A passive infra-red detector according to claim 21 and wherein said at least one predetermined criterion comprises whether ratios between said time difference and each of said time durations lie within a predetermined range of values.

24. (Currently Amended) A passive infra-red detector according to ~~either of claims 22 and 23~~ and wherein said predetermined range of values is based at least in part on divergence angles of at least two zones of two different ones of said at least three sub fields-of-view corresponding to said at least two adjacent ones of said at least three sub-detectors.

25. (Currently Amended) A passive infra-red detector according to ~~either of claims 22 and 23~~ and wherein said predetermined range of values is based at least in part on an angle between of at least two zones of two different ones of said at least three sub fields-of-view corresponding to said at least two adjacent ones of said at least three sub-detectors.

26. (Currently Amended) A passive infra-red detector according to ~~any of the preceding claims-claim 1~~ and wherein said passive infra-red detector is operative to receive radiation from a field-of-view having a field-of-view divergence angle of at least 45 degrees.

27. (Currently Amended) A passive infra-red detector according to ~~any of the preceding claims-claim 1~~ and wherein at least one of said at least three sub fields-of-view comprises a single coplanar azimuthally distributed detection zone.

28. (Currently Amended) A passive infra-red detector according to ~~any of the preceding claims-claim 1~~ and wherein at least one of said at least three sub fields-of-view comprises multiple coplanar azimuthally distributed detection zones.

29. (Currently Amended) A passive infra-red detector according to ~~any of the preceding claims-claim 1~~ and wherein at least one of said at least three sub fields-of-view comprises a single vertically distributed detection zone.

30. (Currently Amended) A passive infra-red detector according to ~~any of the preceding claims—claim 1~~ and wherein at least one of said at least three sub fields-of-view comprises multiple vertically distributed detection zones.

31. (Currently Amended) A passive infra-red detector according to ~~any of the preceding claims—claim 1~~ and also comprising a housing formed with an aperture adapted for passage therethrough of infra-red radiation, wherein said at least three sub fields-of-view intersect generally at an intersection region located at said aperture, and said aperture is generally equal in size to the size of said intersection region.

32. (Original) A passive infra-red detector according to claim 31 and wherein a window transparent to infra-red radiation is located adjacent said aperture.

33. (Original) A passive infra-red detector according to claim 32 and wherein a center of said window is located generally at a center of said aperture.

34. (Currently Amended) A passive infra-red detector according to ~~either of claims 32 and 33~~ and wherein said window has a circular cross-section.

35. (Currently Amended) A passive infra-red detector according to claim ~~either of claims 32 and 33~~ and wherein said window is generally flat.

36. (Currently Amended) A passive infra-red detector according to ~~any of claims 32 to 35~~ and wherein said window is formed of at least one of HDPE, Silicon and Germanium.

37. (Currently Amended) A passive infra-red detector according to ~~any of claims 32 to 36~~ and also comprising masking detection functionality for providing an alarm output upon detection of masking materials obstructing said window.

38. (Currently Amended) A passive infra-red detector according to claims ~~any of claims 32 to 37~~ and also comprising a guard element surrounding said window for providing mechanical protection to said window.

39-222. (Canceled)

223. (New) A passive infra-red detector according to claim 10 and wherein said signal processing circuitry is operative to note a sequence of receipt of said output signals by said at least three sub-detectors and to provide motion direction output based on said sequence.

224. (New) A passive infra-red detector according to claim 10 and wherein said signal processing circuitry is operative to note a sequence of receipt of said output signals by said at least three sub-detectors and to provide motion path output information based on said sequence.

225. (New) A passive infra-red detector according to claim 10 and wherein said signal processing circuitry is operative to process said output signals according to at least one predefined criterion.

226. (New) A passive infra-red detector according to claim 225 and wherein said at least one predefined criterion comprises whether a time duration between receipt of said output signals from adjacent ones of said at least three sub-detectors lies within a predetermined range of values.

227. (New) A passive infra-red detector according to claim 225 and wherein said signal processing circuitry is operative to process said output signals according to said at least one predefined criterion by noting time durations of said output signals from adjacent ones of said at least three sub-detectors and providing said motion detection output at least when the ratio between said time durations is within certain limits.

228. (New) A passive infra-red detector according to claim 227 and wherein said ratio is in the range of 0.5 to 2.0.

229. (New) A passive infra-red detector according to claim 225 and wherein said signal processing circuitry is operative to process said output signals according to said at least one predefined criterion by noting a time difference between receipt of said output signals and time durations of said output signals and to provide said motion detection output in response to receipt of said output signals from at least two adjacent ones of said at least three sub-detectors having respective time durations and a time difference therebetween, said time durations and said time difference therebetween having a time relationship therebetween which meets at least one predetermined criterion.

230. (New) A passive infra-red detector according to claim 229 and wherein said at least one predetermined criterion comprises whether a ratio between said time difference and at least one of said time durations lies within a predetermined range of values.

231. (New) A passive infra-red detector according to claim 229 and wherein said at least one predetermined criterion comprises whether ratios between said time difference and each of said time durations lie within a predetermined range of values.

232. (New) A passive infra-red detector according to claim 230 and wherein said predetermined range of values is based at least in part on divergence angles of at least two zones of two different ones of said at least three sub fields-of-view corresponding to said at least two adjacent ones of said at least three sub-detectors.

233. (New) A passive infra-red detector according to claim 230 and wherein said predetermined range of values is based at least in part on an angle between of at least two zones of two different ones of said at least three sub fields-of-view corresponding to said at least two adjacent ones of said at least three sub-detectors.

234. (New) A passive infra-red detector according to claim 10 and wherein said passive infra-red detector is operative to receive radiation from a field-of-view having a field-of-view divergence angle of at least 45 degrees.

235. (New) A passive infra-red detector according to claim 10 and wherein at least one of said at least three sub fields-of-view comprises a single coplanar azimuthally distributed detection zone.

236. (New) A passive infra-red detector according to claim 10 and wherein at least one of said at least three sub fields-of-view comprises multiple coplanar azimuthally distributed detection zones.

237. (New) A passive infra-red detector according to claim 10 and wherein at least one of said at least three sub fields-of-view comprises a single vertically distributed detection zone.

238. (New) A passive infra-red detector according to claim 10 and wherein at least one of said at least three sub fields-of-view comprises multiple vertically distributed detection zones.

239. (New) A passive infra-red detector according to claim 10 and also comprising a housing formed with an aperture adapted for passage therethrough of infra-red radiation, wherein said at least three sub fields-of-view intersect generally at an intersection region located at said aperture, and said aperture is generally equal in size to the size of said intersection region.

240. (New) A passive infra-red detector according to claim 239 and wherein a window transparent to infra-red radiation is located adjacent said aperture.

241. (New) A passive infra-red detector according to claim 240 and wherein a center of said window is located generally at a center of said aperture.

242. (New) A passive infra-red detector according to claim 240 and wherein said window has a circular cross-section.

243. (New) A passive infra-red detector according to claim 240 and wherein said window is generally flat.

244. (New) A passive infra-red detector according to claim 240 and wherein said window is formed of at least one of HDPE, Silicon and Germanium.

245. (New) A passive infra-red detector according to claims 240 and also comprising masking detection functionality for providing an alarm output upon detection of masking materials obstructing said window.

246. (New) A passive infra-red detector according to claim 240 and also comprising a guard element surrounding said window for providing mechanical protection to said window.

247. (New) A passive infra-red detector according to claim 11 and wherein said signal processing circuitry is operative to ignore said future detections only in a case where said multiple detections fulfill predetermined pre-alarm criteria.

248. (New) A passive infra-red detector according to claim 11 and wherein said signal processing circuitry is operative to ignore said future detections only in a case where said multiple detections fulfill predetermined alarm criteria.

249. (New) A passive infra-red detector according to claim 11 and wherein said signal processing circuitry is operative to extend said predetermined second time period in response to detections by said one of said at least two sub-detectors during the predetermined second time period.